

REMARKS

In the Office Action of December 13, 2006, the Examiner rejected claims 10-12 under 35 USC 112 for failing to comply with the written description requirement. Claims 10-12 have been cancelled.

The Examiner further objected to the drawings under 37 CFR 1.83(a) as failing to set forth the limitations in claim 10 directed to cutouts sized and shaped to engage raised ridges on the flexible conduit. As stated, claims 10-12 have been cancelled and the limitations noted by the Examiner are not included in the one remaining claim.

The Examiner further rejected claims 10-12 under 35 USC 103(a) as being unpatentable over Franklin Jr. (4,792,363) in view of Berfield (6,478,342) and Clements (2,326,439) and also rejected claims 10-12 under 35 USC 103(a) as being unpatentable over Franklin Jr. in view of Draudt (4,625,998) and Clements.

Claims 10-12 have been cancelled but each of the cited references are addressed below.

Applicant's invention is directed to a solution of the problem where a rotating flexible shaft is included within a flexible conduit for the purpose of vent cleaning and interference between the rotating flexible shaft and the flexible conduit can increase the torque load on the shaft causing shaft failure. (See specification page 2, lines 3-17 and page 3, lines 12-14; Publication 2005/0109375 ¶¶ [0006] - [0007] and ¶ [0010]).

More particularly, the disclosed embodiment of the invention teaches the use of a flexible rotating shaft driven by an electric motor with the rotating shaft being placed within a flexible tubular vacuum conduit. A brush is attached to one end of the rotating shaft and the

brush along with the conduit is inserted into an angled vent for cleaning. As the brush rotates dust is removed from inside the vent. A vacuum source is connected to the end of the conduit outside the vent which draws dust from the vent and through the conduit.

A major problem with this arrangement is interference between the rotating shaft and the conduit as the conduit is inserted into the vent and forced through angles in the vent causing the rotating shaft to come in contact with the inside surface of the conduit. This contact results in interference with the rotating shaft which increases the torque load and can damage or destroy the shaft.

This problem has been specifically recognized in Beynon Publication No. 2003/0192143 A1, paragraphs 0018 and 0019 where hose damage caused by an internal rotating shaft is described. The solution devised in Beynon to prevent more damage is to place the shaft driving motor at the nozzle of the vacuum hose which has inherent disadvantages in terms of cost and ease of use. This reference therefore teaches away from Applicant's invention.

In contrast, Applicant's solution to the problem is to provide a swivel cuff between the vacuum source and the flexible vacuum conduit. The swivel cuff has a base with a first threaded end for securing the swivel cuff to the vacuum source and a collar rotatable with respect to the base with the collar being removably secured to the flexible vacuum conduit. This allows the collar and the flexible conduit to rotate, if necessary, when the rotating shaft comes in contact with the conduit. Therefore, interference between the rotating shaft and the conduit is minimized, reducing excessive torque loads on the shaft and thus preventing shaft damage or destruction.

The Franklin Jr. reference cited by the Examiner does not teach the use of a swivel cuff to prevent damage to the rotating shaft as acknowledged by the Examiner. Rather, the Examiner relies on the references to Berfield and Draudt et al. to show the use of a swivel coupling.

The reference to Berfield is directed to a swivel coupling for attachment to a hose. The swivel coupling comprises a sleeve having an aperture sized to receive a retainer clip. The hose has convolutions on its outer surface so that the retainer clip may be attached to the hose. When the hose is inserted into the sleeve the retainer clip is inserted into the aperture and attached to the hose. This secures the hose against axial movement yet allows the hose to swivel.

This reference does not address the problem of protecting a rotating shaft within a hose from damage resulting from interference between the hose and the rotating shaft. Also, this reference does not describe a swivel cuff as is used with the present invention containing a base and a collar rotatable with respect to the base.

Accordingly, it is respectfully submitted that this reference does not teach or suggest Applicant's invention, either standing alone or in combination with Franklin Jr.

The reference to Draudt et al. describes a swivel hose coupling having two parts, a swivel insert which is threaded onto the end of a hose and a swivel hose end piece into which the swivel insert is placed. The swivel insert is designed to rotate within the end piece. Again this reference does not address the problem of protecting a rotating shaft within a hose from damage resulting from interference between the hose and the rotating shaft.

Therefore, it is respectfully submitted that this reference does not teach or suggest Applicant's invention either standing alone or in combination with Franklin Jr.

The Examiner's rejection of the cancelled claims was based on a determination of obviousness under 35 USC 103(a). For an obviousness determination there must be a teaching or suggestion within the prior art, or within the general knowledge of a person of ordinary skill in the art, to look to particular sources of information, to select particular elements and to combine them in the way they were combined by the inventor. Northern Telecom Inc. v. Datapoint Corp., 908 F.2d 931, 935 (Fed. Cir. 1990). Any suggestion in the prior art must be clear and particular. In re Dembiczak 175 F.3d 994, 999 (Fed. Cir. 1999).

Here none of the references of record, either alone or in combination address the problem solved by the present invention, which is to protect a rotating shaft within a hose or conduit. The additional reference brought to the Examiner's attention herein, Beynon Publication No. 2003/0192143 A1 teaches away from the present invention.

Accordingly, it is respectfully submitted that claim 14, the remaining claim in this application, is patentable over the references of record and passage to issue is respectfully requested.

Respectfully submitted,

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